

# Start-up

## Overview

Start-up of the watershed analysis team involves administrative functions of notification of other landowners, the DNR, other state agencies, local governments, Indian tribes, and the public; identification of the assessment and field manager teams; and assembly of the maps, aerial photographs, and management history required by the resource assessment team. Whether conducted by a landowner-sponsored team or the DNR, the efficiency of watershed analysis is affected by the openness of the process, landowner support and involvement, availability of local knowledge, team composition and function, GIS capabilities and prior assembly of required information.

It is recommended that a scoping meeting be held with other landowners in the watershed analysis unit and affected agency and tribal representatives prior to official startup. The intent of this meeting is to explain the process and outcome of watershed analysis and solicit their participation, if appropriate.

This is also the time to hold the first meeting with the teams, preferably both resource assessment and field managers. Prior to this first team meeting, team leaders should ensure that their team has an approved WAU base map with the updated WAU boundary, and all maps and aerial photos they will need. At this first meeting, the team should develop a schedule and recognize the importance of staying on that schedule.

## Watershed Analysis Initiation

A watershed analysis for a WAU is initiated either by landowners whose lands comprise 10% or more of the watershed or by the DNR according to its priority based on the DNR watershed screening. The WAU boundaries are determined by DNR and are available in digital form. These boundaries were pre-delineated at 1:100,000 scale. Prior to official start-up, the WAU boundary needs updating to 1:24,000 scale and approval from DNR. Updates to this larger scale may be provided by either landowners or DNR. These boundary corrections require approval from DNR Forest Practices prior to further data acquisition.

Landowners may initiate either a Level 1 or Level 2 assessment and are responsible for arranging for the appropriate analysts or specialists and field managers required to complete the process. A list of qualified analysts and specialists is available from the DNR, Forest Practices Division, (360) 902-1400. Qualification requires that an individual have appropriate skills, experience and education and has completed the DNR training in watershed analysis. (A Level 1 team has 21 calendar days to complete the assessment while a Level 2 team has 60 calendar days.)

Retraining is advisable if substantial revisions are made to the watershed analysis manual.

## Team Roles and Expertise

There are a variety of functions that must be performed for a team to successfully and efficiently accomplish watershed analysis. These include administrative, scientific, management decision-making, and support functions.

The success of the team may be determined by the energy and skills of the team leader.

The project manager's job is to complete the watershed analysis. The project manager acts as a facilitator between the assessment team and the field managers team and keeps the entire process on the time track that has been established.

Weekly status reports from the module leaders to the team leader may be an effective way of keeping track of their progress. It is recommended that the team leader not assume the role of a module leader.

Observers may be allowed in the watershed analysis process. Their presence is up to the initiator of the watershed analysis. If they are allowed, their roles should be clearly defined during the start-up procedure.

## Project Manager

- Notifies landowners and requests start-up information, including official basemap;
- Appoints qualified members to the team (forest landowners conducting watershed analyses are encouraged to include available, qualified expertise from state and federal agencies, affected Indian tribes, other landowners, local government entities, and the public.) Early notification will facilitate securing qualified personnel;

- Notifies DNR that a watershed analysis is to be performed;
- Obtains list of landowners and other interested/affected parties in the WAU, sends letter of notification, and requests start-up information.;
- Sets up contacts with local expertise and requests other additional information;
- Monitors timelines for notification/products; coordinates meetings; and
- Completes environmental (SEPA) checklist.

## Assessment Team Leader

- Schedules first team meeting; and
- Oversees team performance and ensures quality of completed product.

## Resource Assessment Analysts and Specialists

- Implement the inventory modules (see Resource Assessment section of this manual):
  - Mass Wasting
  - Surface Erosion
  - Hydrology
  - Riparian Function
  - Fish Habitat
  - Water Quality
  - Public Capital Improvements
- Conduct watershed synthesis identifying resource sensitivities and rule calls described in the causal mechanism report.

## Field Managers Team

- Produce prescriptions for areas of resource sensitivity; team may include members with expertise in the following disciplines:
  - Forestry
  - Forest Engineering
  - Fisheries
  - Forest Hydrology and/or Water Quality

## Data Technician (Optional, *Recommended*)

- Produces or acquires official basemap, assists with compiling other maps and photographs for start-up.
- Acquires digital datasets from the DNR of other GIS compatible sources.
- Assimilates 'canned' computer programming for use in map and report generation.
- Provides special GIS/Cartographic products and analysis in support of management decision-making, time management, and prescription writing.
- Compiles digital data for ARS's (Areas of Resource Sensitivity).
- Helps produce the watershed analysis report.

## Landowners

- Participate in watershed analysis process through qualified representation on resource assessment and/or field managers teams;
- Facilitate assessment process by providing information and materials;
- Ensure access to area; and
- May submit prescriptions to field managers team.

## Tribal Representative

- Participate in watershed analysis process through qualified representation on resource assessment and/or field managers teams;
- Facilitate assessment process by providing information and materials; and
- Can cooperatively implement watershed analysis with the department depending on tribal resources.

## Observers (Optional)

- Observe watershed analysis process and/or may perform field work under supervision of qualified analysts or specialists.
- Additional participation is at the option of the project manager.

# Start-up Materials

Timelines for completion of Level 1 and Level 2 watershed analysis are set forth in the rule (WAC 222-22-070, -080). The availability and quality of materials and data at the start of the analysis are keys to meeting required timelines. A common set of maps and aerial photographs is needed by all of the resource assessment modules and must be gathered by the team or project leader prior to the team's first start-up meeting. If this is done, the team will be able to begin field assessment immediately and will be more likely to meet the time requirement for producing a causal mechanism report.

Table 2 lists the information, maps, and aerial photographs that should be produced prior to assembling the assessment team. The notification letter should request landowners to provide the key management information specified in the table. If possible, the information from all landowners should be consolidated onto the official basemap.

Table 2. Startup Materials for Each WAU

What	Detail to be included	Where obtained
<b>Official DNR Base Map</b>  1:24,000 scale 1:2,000 ft.)	<ul style="list-style-type: none"> <li>• Official base map with township and ranges</li> <li>• WAU study area boundary</li> <li>• All streams and surface water typed according to the DNR water type map</li> </ul>	<ul style="list-style-type: none"> <li>• Forest Practices Division, Department of Natural Resources (Olympia)</li> </ul>
<b>Topographic Map</b>	<ul style="list-style-type: none"> <li>• USGS 7.5 minute topographic maps (or better)</li> </ul> <p><b>Note:</b> Digitized elevation data from the USGS is usually of insufficient resolution.</p>	<ul style="list-style-type: none"> <li>• USGS</li> <li>or</li> <li>• DNR Photo and Map Sales</li> <li>• Local vendors</li> </ul>
<b>Vegetation Age Maps</b>	<ul style="list-style-type: none"> <li>• Forest stand age map in 10-year increments</li> <li>• Hydrologic maturity map</li> </ul>	<ul style="list-style-type: none"> <li>• Landowners</li> <li>• DNR GIS Group</li> </ul>
<b>Road Map</b>	<ul style="list-style-type: none"> <li>• Complete road map color coded according to the attached table</li> </ul>	<ul style="list-style-type: none"> <li>• Landowners</li> </ul>
<b>Soil Erosion Map</b>	<ul style="list-style-type: none"> <li>• Soil erosion potential map for the WAU</li> </ul>	<ul style="list-style-type: none"> <li>• DNR maps and cartography</li> </ul>
<b>Aerial Photographs</b>	<ul style="list-style-type: none"> <li>• All available photography, with a special emphasis on the (1) oldest and (2) most current photo sets</li> </ul> <p><b>Note:</b> Flight lines for all photo series should be clearly keyed to location in the study area.</p>	<ul style="list-style-type: none"> <li>• Landowners</li> <li>or</li> <li>• DNR Photo and Map Sales</li> </ul>
<b>Management Activities</b>	<ul style="list-style-type: none"> <li>• Logging history by logging type (with general areas of tractor, highlead, or railroad logging noted)</li> <li>• Areas of INTENSE burns (natural or prescribed)</li> <li>• Known locations of splash-damming</li> <li>• Known locations of stream cleaning</li> </ul>	<ul style="list-style-type: none"> <li>• Landowners</li> <li>• Landowners</li> <li>• Landowners or anecdotal information</li> <li>• Landowners or Dept. of Fish &amp; Wildlife personnel</li> </ul>
<b>Other</b>	<ul style="list-style-type: none"> <li>• Fish distribution questionnaires</li> <li>• Local expertise familiar with the watershed</li> </ul>	<ul style="list-style-type: none"> <li>• Local agency representatives for Dept. of Fish &amp; Wildlife and</li> <li>• Tribal representative</li> <li>• Leader and team's familiarity</li> </ul>

## GIS Support

Although all of the resource assessment methods are designed to be performed with standard maps and photography, these assessments are facilitated by accessing information through a Geographic Information System (GIS). The GIS database can greatly ease the time and effort in capturing and mapping information. The DNR GIS has most, if not all, of the information requested in Table 2.

For watershed analyses conducted by parties other than the DNR, the initiating parties are solely responsible for obtaining the GIS start-up kit from the DNR Forest Practices Division. Indicate types of software and media to be used in the analysis.

Specific information for the GIS team members:

Provide each resource analyst with:

- Copies of team base map
- Copy of specific module base map
- Mylar overlays with new WAU boundary at 1:24,000 scale, USGS 7.5' corner tics, quad boundaries, township and range boundaries, map # and label (i.e., C-1 Hydrology base map) standard map legend for each module

Information on GIS products and official WAU boundaries may be obtained from Liz Thompson, Forest Practices Division at (360) 902-1224.

## Level of Assessment

Resource assessment can begin at either Level 1 or 2. It may have only Level 1 or Level 2 assessment or a combination of both. Level 1 is a reconnaissance assessment, relying predominantly on maps and remotely sensed information with some field checking. The assessment is designed to take one to two week's effort by the team. Level 2 may be similar but results in a more detailed assessment of the overall watershed, or it may be focused on specific resource issues identified by Level 1. More experience and education is required for Level 2 specialists and more time may be needed to perform a Level 2 analysis.

**Begin at Level 1:**

If the assessment begins at Level 1, then the analysts complete the assessment as specified in this manual and determine the resource sensitivities and the rule calls. If the Level 1 assessment contains any areas in which the delivered hazard or resource vulnerability are identified as indeterminate, or if the Level 1 methodology recommends it, then a Level 2 team may be assembled. The uncertainties can only be resolved by a Level 2 team.

**Begin at Level 2:**

If resource assessment begins at Level 2, then the specialist must complete the standard products required of Level 1, except that the Level 2 team shall not have any indeterminates in the calls. Level 2 products may vary somewhat in detail or substance from Level 1 products.

**Level 1 followed by Level 2:**

If the Level 1 assessment results in any indeterminate ratings, then Level 2 analysis may be assembled for the primary task of resolving the uncertainties. The Level 2 specialists have flexibility in methods which allows the team to develop and test hypotheses, responding to the findings of the Level 1 assessment. The manual allows the specialists to exercise judgment in selecting methods to answer the critical questions and asks for justification of their use. The Level 2 team in this situation may not have the full complement of resource analysts to perform each method.

**Level 1 followed by Level 2 for review:**

A Level 2 team may be convened to review all or part of the Level 1 assessment. The team may revise the ratings as appropriate.

## Specific Start-up Steps

Before actually beginning a watershed analysis, interested parties should consider updating stream types for the WAU. Stream types should generally not be updated during analysis because parts of the analysis depend on the stream type. Prescriptions often hinge on stream type, so it is advantageous to all concerned to have a good idea of correct stream types prior to analysis.

**Identify leader(s).**

A representative of the DNR or private landowner initiating the watershed analysis must be identified as project manager or the team leader (although



the task can be reassigned after the team has been convened). This person is responsible for conducting the initial steps before the full team is convened.

### **Identify landowners in the WAU.**

If there are few landowners in the WAU, the team leader/initiating landowner, or local DNR forester may be sufficiently familiar with them to compile the appropriate list.

If there is uncertainty of ownership, the county tax assessor may be a good source for this information. If the assessor's forest tax information base is computerized, it may be queried according to township/ranges to yield an ownership list.

### **Notify landowners in the WAU and request information/participation.**

A reasonable attempt will be made to notify landowners in the WAU. The project manager should send out a letter to the landowners with the purpose of (1) notifying them that a watershed analysis is to be conducted, (2) inviting them to participate or observe, (3) requesting the information listed in Table 2, and (4) defining the official starting date and contact person.

Provisions should be made for the team to obtain access to all lands within the WAU.

### **Notify DNR in writing of intent to start a watershed analysis (as set forth in WAC 222-22-040(3)).**

### **Send out the fisheries and capital improvements questionnaire.**

A list of state and tribal representatives is available for each WAU from DNR regional offices.

### **Gather starting information (maps, aerial photographs, management history).**

Start-up materials specified in Table 2 should be assembled. If maps or aerial photographs or GIS data are to be obtained from the DNR, an order should be placed several weeks prior to assembling the team. The team leader is ultimately responsible for securing all information and for adherence to mapping and data standards.

The official DNR base map WAU boundary is the boundary for the watershed analysis. This map can be obtained by acquiring the start-up ARC/INFO macro package from the DNR Forest Practices Division. It is important that

standards established within these macros be maintained since the data sets prepared by watershed analysis will be entered into the DNR GIS and used to track ARS's and related prescriptions.

Be certain you are using the official WAU boundary by contacting DNR Forest Practices Division in Olympia [Liz Thompson, (360) 902-1224]. Use of an incorrect boundary may result in delays in completion and approval of the analysis.

Official start-up GIS macros (ARC/INFO) generating products at 1:24,000 and 8.5 x 11 includes:

- Team base maps aml
- Hydro module aml
- Contour aml
- Landsat aml
- Soil erosion module aml
- and related reports

Official Start-up data sets (ARC/INFO export format) include: WAU boundary (1:24,000 scale)

- |                        |                                |
|------------------------|--------------------------------|
| — Hydro                | — Storm 2, 5, 10, 25, 50, 100  |
| — Trans                | — Precipitation Zones          |
| — Soils                | — Slope morphology             |
| — POCA                 | — Stream temperature           |
| — Canopy               | — 303d (Department of Ecology) |
| — Annual precipitation | — FPWET                        |
|                        | — LAT75 (DEM's)                |
- Topographic maps - USGS 7.5'
  - Aerial photos

It may be useful to prepare mylar overlays for the basemap to be used by each of the resource analysts:

- Transfer boundaries of the WAU onto each.

- Put register marks on the map layers and transfer onto mylars.
- Label mylar layers with map number and title.
- Decide where the legend will go on all maps and what the legend design will be.

### **Identify resource assessment team and other participants in the process.**

It is recommended that the field managers team also be identified early in the process. Complete the team information form.

### **Schedule first meeting:**

- Develop team schedule and responsibility list.
- Develop plan for common sampling and coordination of fieldwork.

### **Begin Resource Assessment.**

## **Products of Start-up**

- Notification sent by DNR or initiating landowner.
- Official WAU boundary map at 1:24,000 scale.
- Work map identifying landowners who need to be notified of watershed analysis and contacted for access.
- Team schedule.
- Team Information Form(s) 1 lists members of the Resource Assessment Team; Form 2, the Field Manager's Team. The WAU, date of notification, and initiating landowner should be clearly identified on each form.

## Form 1. Team Information Form

WAU: \_\_\_\_\_ Start Date: \_\_\_\_\_ Initiated by: \_\_\_\_\_

Position	Name	Address	Phone Home/FAX	Cert. Level
Team Leader				
Administrator				
Resource Specialists				
• Mass Wasting				
• Surface Erosion				
• Hydrology				
• Fish Habitat				
• Riparian Function				
• Stream Channel				
• Water Supply Public Works				
Data Technician				
Landowner Representatives				
Tribal Representatives				

## Form 2. Field Manager's Team Information

WAU: \_\_\_\_\_ Start Date: \_\_\_\_\_ Initiated by: \_\_\_\_\_

Position	Name	Address	Phone Home/FAX	Cert. ? Y/N
Team Leader				
Participant				
Participant				
Participant				
Participant				
Participant				
Participant				
Observer				
Observer				
Observer				
Observer				

